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NOVAQUESTA TRIFURCATA, A NEW GENUS AND  
SPECIES OF THE FAMILY QUESTIDAE  
(ANNELIDA, POLYCHAETA)  
FROM CAPE COD BAY,  
MASSACHUSETTS<sup>1</sup>

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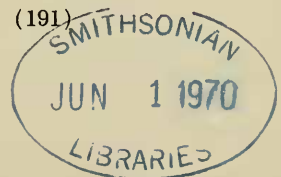
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The little-known family Questidae Hartman (1966) has been known for only one genus and species, *Questa caudicirra* Hartman (1966), from Southern California. Polychaetes belonging to this family were found in some samples collected in Cape Cod Bay by the Biotic Census of the Systematics-Ecology Program. The specimens represent a new genus and species and are described below. I am grateful to Dr. Olga Hartman for the loan of specimens from the type lot of *Q. caudicirra* and for critically reading the manuscript. Discussions with Dr. D. G. Cook have been very helpful.

The family Questidae includes small slender worms that superficially resemble oligochaetes. Specimens of both of the presently known species have been collected from coarse sediments at shelf depths. The following characters are found both in *Questa* Hartman (1966) and *Novaquesta* new genus, and may represent family characters: Prostomium lacks appendages; peristomial segment achaetous; inconspicuous biramous parapodia, provided at least with a few thick bifid hooks and a few serrated capillary setae; pygidium slightly bilobed, anal cirri present or absent; reproductive structures

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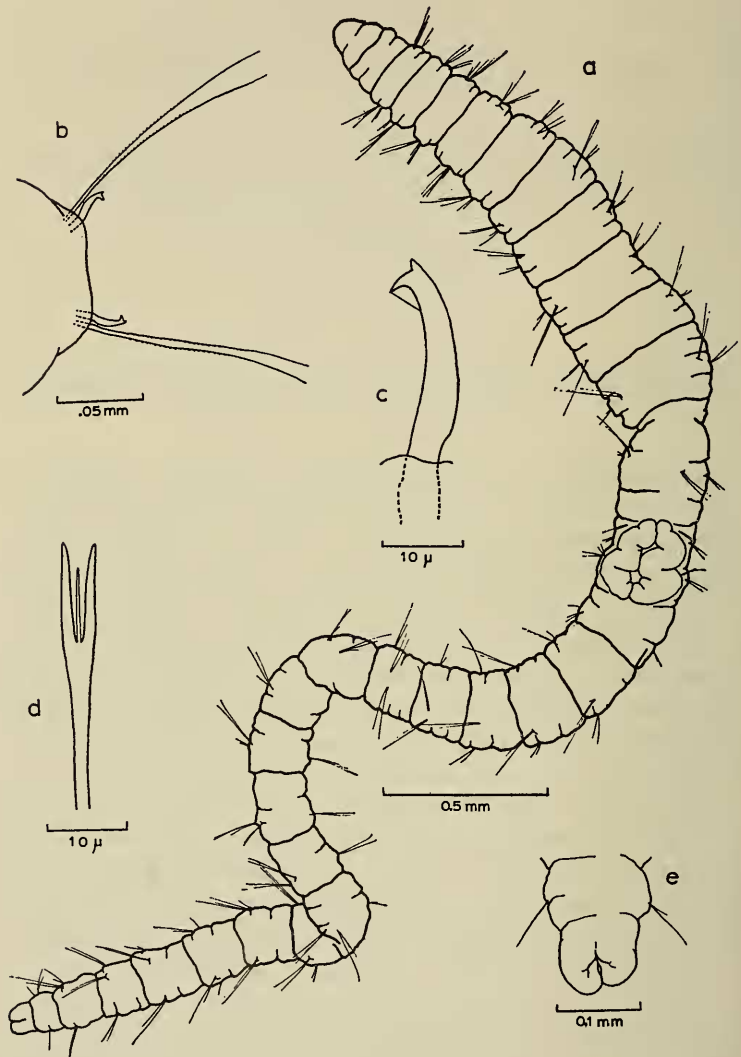


FIG. 1. *Novaquesta trifurcata* new species: a, dorsal view of male; b, posterior parapodium; c, bidentate seta from a median setiger; d, trifurcate seta from notopodium of third setiger; e, postero-ventral view of pygidium.

confined to a few segments. There is a ventral buccal organ. This structure has some phylogenetic value, so it is likely that the Questidae are allied to other Sedentaria possessing a ventral buccal organ (see Dales, 1962).

**Novaquesta** new genus

*Type species:* *N. trifurcata* new species. Gender: feminine.

*Diagnosis:* Small slender worms. First segment achaetous and biannulate; the remaining segments with inconspicuous biramous parapodia. Three kinds of simple setae: (1) serrated capillary setae; (2) thick bifid hooks; and (3) modified setae. Pygidium bilobed, without cirri.

*Remarks:* The presence of three kinds of setae and the absence of anal cirri distinguish *Novaquesta* from *Questa* Hartman.

**Novaquesta trifurcata** new species

Figs. 1a-e

*Type material:* This species is based on 100 specimens collected from sandy sediment in Cape Cod Bay. The holotype ♂, (USNM 40460), and 15 paratypes ♂ and ♀ (USNM 40461) come from station 1412-E4 (41°54.0'N, 70°8.6'W; 17 m depth; 11 June 1968) and are deposited in the Smithsonian Institution. Additional paratypes are deposited in the Gray Museum of the Systematics- Ecology Program (51; ♂ and ♀) and in the collections of the Allan Hancock Foundation of the University of Southern California (3; ♂ and ♀) and the collections of D. G. Cook (15; ♂) and of the author (15; ♂ and ♀). Seventy-two of these paratypes come from station 1412-E4, four from station 1412-Ep, two from station 1514-E1 (41°53.5'N, 70°10.7'W; 18 m depth; 19 January 1967), one from station 1530-E3 (41°53.0'N, 70°31.4'W; 12 m depth, 21 November 1967), and five from station 2130-E2 (41°48.0'N, 70°31.4'W; 7 m depth; 21 November 1967).

*Etymology:* The name refers to the nature of the modified setae.

*Description:* Mature worms are about 4-6 mm long and 0.3-0.4 mm wide (without setae), colorless (preserved in alcohol) and have about 30 setigers. Except for the inconspicuous parapodia, the body lacks appendages (Fig. 1a). The prostomium and first segment are somewhat biannulate. All parapodia, except occasionally the last one or two pairs, are biramous and have at least two kinds of setae (Fig. 1b). There are usually two serrated capillary setae and one thick bifid hook in each ramus. Occasionally there may be three or four capillaries or two bifid hooks in a ramus. The bifid hooks begin on the first setiger and consist of a main tooth at right angles to the shaft, a small apical tooth, and a faint connection between the shaft and the tip of the main tooth (Fig. 1c). There are one or two trifurcate setae in each of the first five to eight notopodia. The trifurcate setae consist of two well-

defined prongs and a shorter, fainter, and more slender middle prong (Fig. 1d).

The anus is surrounded by two lateral lobes and lacks anal cirri (Fig. 1e).

The 12th and 13th segments of mature females contain several yolky eggs of various sizes. Usually the largest egg in a female is about 200  $\mu$  in diameter. The 13th and 14th segments of mature males are somewhat shortened and there is a dorsal folding of the body wall (Fig. 1a) in the region of the genitalia. This and other aspects of the anatomy of *N. trifurcata* are being studied by Dr. David G. Cook.

*Distribution*: Known only from Cape Cod Bay.

*Remarks*: The genitalia of the two specimens of *Q. caudicirra* that I have studied are also concentrated on a few segments. The female has a few large eggs in the 12th and 13th segments. The segments bearing the "dorsal fold" of the male are achaetous, and it appears that the "dorsal fold" is located on the 13th and 14th segments.

*Questa caudicirra* and *Novaquesta trifurcata* are distinguished by the following:

	<i>Q. caudicirra</i>	<i>N. trifurcata</i>
modified setae:	absent	trifurcate setae in anterior notopodia
branchiae:	dorsal cirriform branchiae in posterior setigers	absent
anal cirri:	2 pairs	absent
segments bearing "dorsal fold" of male:	setae absent	setae present

#### LITERATURE CITED

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- HARTMAN, O. 1966. Quantitative survey of the benthos of San Pedro Basin, Southern California. Part II. Final results and conclusions. *Allan Hancock Pac. Exped.*, 19: 187-456.